Document Streaming with viewone pro

If your users need to retrieve large multi-page PDF files from your web-based repository across a TCP/IP network either remotely or in-house, the download delays and significant network traffic involved could be both frustrating and unnecessary.

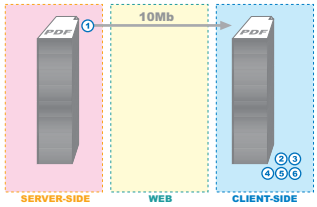
ViewONE Pro's Document Streaming Server Module splits both multi-page TIFFs and PDFs on the server on the fly, sending data for just the pages requested by the viewer, significantly reducing the data transfer and speeding up page viewing considerably. The split pages (individual TIFFs and PDFs) can be cached for future use for additional performance gains.

This document illustrates the typical performance times seen when using standard, non-linearized PDFs with a PDF viewer, linearized PDFs with a PDF viewer, and non-linearized PDFs with ViewONE Pro and the Document Streaming Server Module.

What is linearization? Linearization is an optimization offered within Adobe's Acrobat Professional, which allows page data to be stored sequentially, in page order. When working with linearized PDFs, some PDF viewers allow users to see pages as they are downloaded, i.e. before the download of the file is complete. Typically, as with a TIFF file, the pages within a PDF are stored in a non-linear, or jumbled order. With non-linearized PDFs, the entire document has to be downloaded before page 1 can be viewed. For test purposes, we have examined the time taken to view the first (and then the last) page of a 10Mb, 1,000 page PDF file.

Non-linearized PDF viewing with a PDF viewer

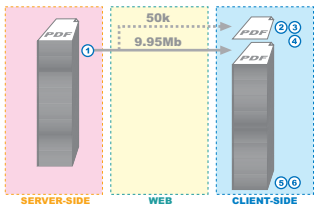
1. Click to view page 1 of the document
2. Entire document is downloaded
3. Page 1 is rendered to screen
4. Click to view page 1,000 of the document
5. Page 1,000 retrieved from memory
6. Page 1,000 is rendered to screen



Total file size transferred for viewing both pages: 10Mb

Linearized PDF viewing with a PDF viewer

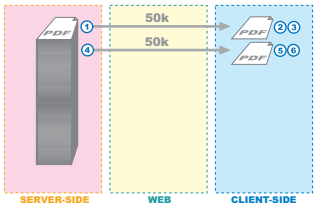
1. Click to view page 1 of the document
2. Entire document starts to download
3. When page 1 is downloaded, it is rendered to screen. The remainder of the document continues to download.
4. Click to view page 1,000 of the document
5. The entire document must be completely downloaded in order to view the last page
6. Page 1,000 is rendered to screen



Total file size transferred for viewing both pages: 10Mb

Non-linearized PDF viewing with ViewONE Pro's Document Streaming Server Module

1. Click to view page 1 of the document
2. ViewONE Pro's Streaming Server Module selects the data relating to page 1 from the file and sends it to the viewer
3. Page 1 is rendered to screen
4. Click to view page 1,000 of the document
5. The Streaming Server Module extracts the data for page 1,000 and sends it to the viewer
6. Page 1,000 is rendered to screen



Total file size transferred for viewing both pages: 100k

DAEJA image systems

Theoretical file transfer/download times

Any demonstration of actual network times for file transfer or download must take into account a wide range of factors which affect the speeds of network traffic and the structure of the network (for example, standard ethernet or IBM Token Ring network). Network capacities also differ dramatically, and in fact exponentially, with increasing user numbers. For the purposes of comparison, we're going to use theoretical performance times for our 10Mb, 1,000 page PDF file, based on 100% of network capacity usage, to illustrate the proportional differences between the options.

Non-linearized PDF viewing with a PDF viewer - network download time

Network speed	Time to view p.1	Time to view p.1,000	Total time for both pages
100Mbit LAN	1 second	0 seconds	1 second
10 Mbit LAN	10 seconds	0 seconds	10 seconds
2 Mbit Broadband	50 seconds	0 seconds	50 seconds
500k Broadband	200 seconds	0 seconds	200 seconds

Linearized PDF viewing with a regular PDF viewer - network download time

Network speed	Time to view p.1	Time to view p.1,000	Total time for both pages
100Mbit LAN	0.05 seconds	0.95 seconds	1 second
10 Mbit LAN	0.5 seconds	9.5 seconds	10 seconds
2 Mbit Broadband	2.5 seconds	47.5 seconds	50 seconds
500k Broadband	10 seconds	190 seconds	200 seconds

Non-linearized PDF viewing with ViewONE Pro's Document Streaming Server Module

Network speed	Time to view p.1	Time to view p.1,000	Total time for both pages
100Mbit LAN	0.05 seconds	0.05 seconds	0.1 seconds
10 Mbit LAN	0.5 seconds	0.5 seconds	1 second
2 Mbit Broadband	2.5 seconds	2.5 seconds	5 seconds
500k Broadband	10 seconds	10 seconds	20 seconds

Networking Bottlenecks

We have mentioned how download times can increase exponentially with large numbers of users. What is also significant when considering viewing performance is the network traffic that larger user groups generate. When we scale up the total file transfer involved in viewing page 1 and then page 1,000 of our 10Mb PDF file for 100 users, the resultant traffic could cause substantial delays and network problems. Streaming with ViewONE Pro's Document Streaming Server Module removes such potentially damaging bottlenecks (see below):

PDF Viewing option	File Transfer (1 user)	File Transfer (100 users)
Non-linearized PDF viewing with a PDF viewer	10Mb	1,000Mb
Linearized PDF viewing with a PDF viewer	10Mb	1,000Mb
Non-linearized PDF viewing with ViewONE Pro's Streaming Module	100k	10Mb

DOCUMENT STREAMING SERVER MODULE PRICING

The Document Streaming Server Module to be used in conjunction with ViewONE Pro
For full pricing information on all products including the Document Streaming Server Module and ViewONE Pro, please visit: www.daeja.com

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